Notice No.3

Rules and Regulations for the Classification of Ships, July 2020

The status of this Rule set is amended as shown and is now to be read in conjunction with this and prior Notices. Any corrigenda included in the Notice are effective immediately.

Please note that corrigenda amends to paragraphs, Tables and Figures are not shown in their entirety.

Issue date: December 2020

Amendments to	**Effective date**	**IACS/IMO implementation (if applicable)**
Part 1, Chapter 2, Sections 2 & 3	Corrigendum	N/A
Part 1, Chapter 3, Section 1	Corrigenda	N/A
Part 3, Chapter 2, Section 2	Corrigenda	N/A
Part 3, Chapter 11, Sections 2 & 10	Corrigendum	N/A
Part 4, Chapter 2, Section 2	Corrigenda	N/A
Part 5, Chapter 2, Sections 1 & 9	Corrigendum	N/A
Part 5, Chapter 10, Section 8	Corrigenda	N/A
Part 7, Chapter 12, Section 5	Corrigenda	N/A

Lloyd's Register

Part 1, Chapter 2
Classification Regulations

■ *Section 2*
Character of classification and class notations

2.1 Definitions

Table 2.2.1 Type notations

Tanker
Liquefied gas tanker
Moored Liquefied gas carrier
Moored Liquefied gas tanker
Moored Liquefied gas storage unit
Moored oil storage tanker

Table 2.2.3 Notations for ice and cold operations

Notation	Description	Conditions	Application	*See also*
Ice Class 1E	~~For offshore supply vessels~~ For ships with length less than 150 m	Light and very light ice conditions	Hull, Machinery	*Pt 8, Ch 2, 4 Hull requirements for light ice conditions – Ice Classes 1D and 1E* and *Pt 8, Ch 2, 5 Machinery requirements for light ice conditions – Ice Classes 1D and 1E*

2.5 Class notations (machinery special features)

2.5.5 The following class notation is associated with low flashpoint fuelled vessels and may be assigned as considered appropriate by the Classification Committee:
LFPF( ) Assigned where the main propelling and/or auxiliary machinery is designed to operate using a low flashpoint fuel in accordance with the applicable LR Rules and Regulations. As a minimum, the **LFPF( )** notation is to be appended by associated characters **GC** or **GF** and one two letter fuel identifier, and will be entered in column 4 of the *Register Book*;

The low flashpoint fuel (or fuels) that the ship is designed to use is (are) indicated in the notation using a two letter identifier:
NG Natural Gas
EG Ethane Gas
~~**LP** Liquid Petroleum Gas (LPG is considered to include pure propane or Butane or any mixture of the two)~~
PG Petroleum Gas or Liquid Petroleum Gas (considered to include pure Propane or Butane or any mixture of the two)

■ *Section 3*
Surveys – General

3.9 Withdrawal/Suspension of Class

3.9.3 Class will be automatically suspended and the Certificate of Class will become invalid if the Annual or Intermediate Survey is not completed within three months of the due date of the survey and an extension has not been agreed (*see Pt 1, Ch 2, 3.11 Force Majeure*), or the vessel is not under attendance by the Surveyors with a view to completion prior to resuming trading.

3.9.4 Class will be automatically suspended from the expiry date of the Certificate of Class in the event that the Special Survey has not been completed by the due date and an extension has not been agreed (*see Pt 1, Ch 2, 3.5 Existing ships – Periodical Surveys 3.5.9*~~,~~ and *Pt 1, Ch 2, 3.11 Force Majeure*), or the vessel is not under attendance by the Surveyors with a view to completion prior to resuming trading.

Part 1, Chapter 3
Periodical Survey Regulations

■ *Section 1*
General

1.1 Frequency of surveys

1.1.7 For ships which are classed as **100AT Moored Liquefied gas carrier for service at (place), 100AT Moored Liquefied gas tanker for service at (place), 100AT Moored Liquefied gas storage unit for service at (place), 100AT Moored Oil Storage Unit for service at (place)** or as **100AT Moored Oil Storage Tanker for service at (place)**, the frequency of the surveys will be considered on a case-by-case basis at the discretion of the Classification Committee.

1.5 Definitions

1.5.8 A **Gas Carrier or Gas Tanker** is a cargo ship constructed or adapted and used for the carriage in bulk of any liquefied gas or other products of flammable nature listed in *Chapter 19* of the *International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk.*

1.5.9 A **Moored Liquefied gas carrier or Moored Liquefied gas tanker** is an Gas Carrier or Gas Tanker that is operated as a storage vessel at a fixed location, defined in the class notation, with the LMC notation either maintained or suspended. The character figure T will be assigned.

1.5.10 A Moored Liquefied gas storage unit is an Gas Carrier or Gas Tanker that is operated as a storage vessel at a fixed location, defined in the class notation, with the LMC notation withdrawn and the main propulsion machinery uncoupled and immobilised. The character figure T will be assigned.

~~1.5.09~~ 1.5.11 A **Moored Oil Storage Unit** is an Oil Tanker or Double Hull Oil Tanker that is operated as a storage vessel at a fixed location, defined in the class notation, with the LMC notation withdrawn and the main propulsion machinery uncoupled and immobilised. The character figure T will be assigned.

~~1.5.10~~ 1.5.12 A **Moored Oil Storage Tanker** is an Oil Tanker or Double Hull Oil Tanker that is operated as a storage vessel at a fixed location, defined in the class notation, with the LMC notation either maintained or suspended. The character figure T will be assigned.

Part 3, Chapter 2
Materials

■ *Section 2*
Fracture control

2.2 Refrigerated spaces

Table 2.2.1 Material classes and grades

ADDITIONAL MINIMUM REQUIREMENTS FOR SINGLE STRENGTH DECK SHIPS OF LENGTH GREATER THAN 150 m~~.~~
ADDITIONAL MINIMUM REQUIREMENTS FOR SHIPS OF LENGTH GREATER THAN 250 m~~.~~
ADDITIONAL MINIMUM REQUIREMENTS FOR SINGLE SKIN BULK CARRIERS SUBJECTED TO SOLAS REGULATION XII/6.5

Part 3, Chapter 11
Closing Arrangements for Shell, Deck and Bulkheads

■ *Section 2*
Steel hatch covers

2.3 Load model

2.3.3 The horizontal weather design pressure, in kN/m^2, for determining the scantlings of outer edge girders (skirt plates) of weather deck hatch covers and of hatch coamings is:

Note The horizontal weather design pressure need not be included in the direct strength calculation of the hatch cover, unless it is utilised for the design of substructures of horizontal support according to *Pt 3, Ch 11, 4.2 Steel covers − Clamped and gasketed 4.2.10.*

$$p_A = a\,c\,(b\,c_L f - z)\ \ \mathrm{kN/m^2}$$

$$= 10{,}75 - \left(\frac{L-350}{\cancel{100}\ 150}\right)^{1{,}5}\quad for\ \ 350\,m \leq L \leq 500\,m$$

$$c_L = \sqrt{\frac{L}{90}}\quad for\ L < 90\,m$$

$$= 1\qquad for\ L \geq 90\,m$$

~~$a = 1$ for unprotected front coamings and hatch cover skirt plates~~

~~$= 1$~~

$a = 20 + \frac{L_1}{12}$ for unprotected front coamings and hatch cover skirt plates

2.8 Net scantling of secondary stiffeners

2.8.1 The net section modulus, *Z*, and net shear area, A_s, of uniformly loaded hatch cover stiffeners constrained at both ends is not to be less than:

$Z = \cancel{\frac{104psl^2}{\sigma_0}}\ \ \frac{0{,}104psl^2}{\sigma_o}$ in cm^3 for design load according to *Pt 3, Ch 11, 2.3 Load model 2.3.2*

$Z = \cancel{\frac{93psl^2}{\sigma_0}}\ \ \frac{0{,}093psl^2}{\sigma_o}$ in cm^3 for design load according to *Pt 3, Ch 11, 2.3 Load model 2.3.4*

$A_s = \cancel{\frac{10{,}8psl}{\sigma_0}}$ ~~, in cm^2~~ $\frac{0{,}0108psl}{\sigma_o}$ in cm^2 for design load according to *Pt 3, Ch 11, 2.3 Load model 2.3.2*

$A_s = \cancel{\frac{9{,}6psl}{\sigma_0}}$ ~~, in cm^2~~ $\frac{0{,}0096psl}{\sigma_o}$ in cm^2 for design load according to *Pt 3, Ch 11, 2.3 Load model 2.3.4*

Part 3, Chapter 13
Ship Control Systems

■ *Section 10*
Anchoring equipment in deep and unsheltered water

10.2 Anchor and chain cable

10.2.1 Anchors and chain cables to be in accordance with *Table 13.10.1 Anchoring equipment for ships in unsheltered water with depth up to 120 m* and based on the Equipment Number EN$_1$ obtained from the following equation.

$$\mathrm{EN}_1 = 0{,}628\left[a\left(\frac{\mathrm{EN}}{0{,}628}\right)^{1/2,3} + b(1-a)\right]^{2,3}$$

where

a = 1,83 x 10^{-9} x ~~*L*~~ L^3 +2,09 x 10^{-6} x ~~L^2~~– 6,21 x 10^{-4} *L* + 0,0866

b = 0,156 x *L* + ~~0,0866~~ 8,372

Part 4, Chapter 2
Ferries, Roll On-Roll Off Ships and Passenger Ships

■ *Section 2*
Longitudinal strength

2.4 Design vertical wave bending moments

2.4.3 The bow flare area, $A_{\text{-BF}}$, is illustrated in *Figure 2.2.1 Derivation of bow and stern flare areas* and may be derived as follows:
~~$A_{BF} = A_{UB} - A_{LB}$ m2~~ $A_{BF} = A_{UB} - A_{LB}$ m^2

Alternatively the following formula may be used:
~~$A_{BF} = 0{,}005L\ (b_0+2b_1+b_2) + b_0\ a/2$m2~~ $A_{BF} = 0{,}05L\ (b_0+2b_1+b_2) + b_0\ a/2$m^2

Existing Figure 2.2.1 has been deleted and replaced with below;

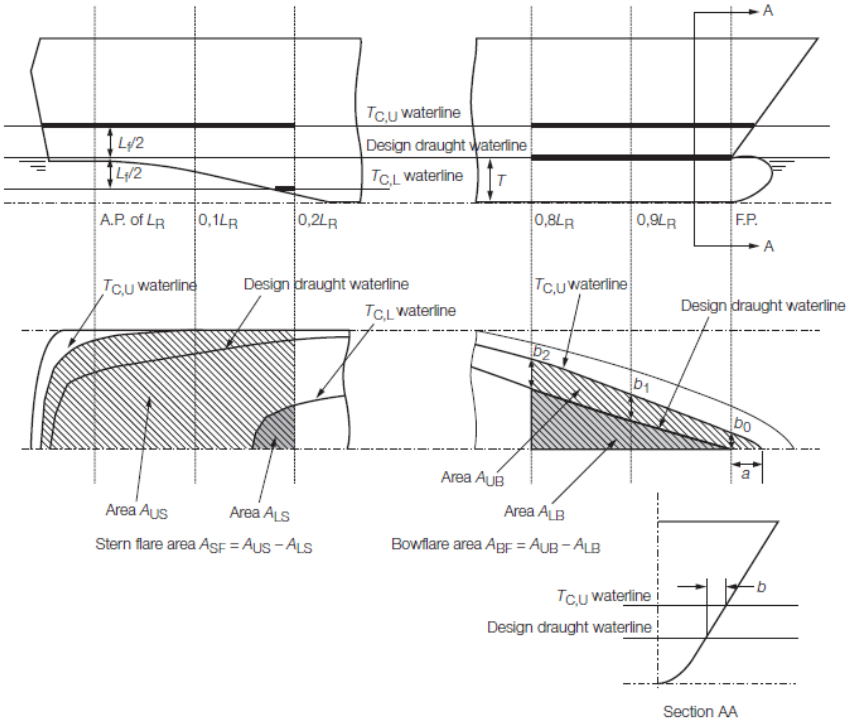

Figure 2.2.1 Derivation of bow and stern flare areas

Part 5, Chapter 2
Reciprocating Internal Combustion Engines

■ *Section 1*
General requirements

1.4 Submission requirements

Table 2.1.1 Plans and particulars to be submitted

Document	For information (X indicates reason for submission)	For appraisal
Generator test results that state the engine maximum load steps which satisfy the quality of power supply requirements specified in ~~*Pt 6, Ch 2, 1.7 Design and construction*~~ *Pt 6, Ch2, 1.8 Quality of power supplies*		X

■ *Section 9*
Starting arrangements

9.3 Electric starting

9.3.1 Where main engines are fitted with electric starters, two batteries are to be fitted. Each battery is to be capable of starting the engines when cold and the combined capacity is to be sufficient without recharging to provide the number of starts of the main engines as required by *Pt 5, Ch 2, 9.2 Air receiver capacity*. In other respects batteries are to comply with the requirements of ~~*Pt 6, Ch 2, 11 Electric cables, optical fibre cables and busbar trunking systems (busways)*~~ *Pt 6, Ch 2, 12 Batteries*.

Part 5, Chapter 10
Steam Raising Plant and Associated Pressure Vessels

■ *Section 8*
Headers

8.3 Toroidal furnace headers

(Part only shown)

8.3.1 The minimum thickness of a toroidal header forming the lower end of a waterwall furnace, and supporting the weight of the boiler and water, is to be determined by the following formula:

~~$t = A + \sqrt{A2 + \frac{4M}{J\,S\,\sigma}} + 0{,}75$ mm~~ $t = A + \sqrt{A^2 + \frac{4M}{JS\sigma}} + c$

where

$A = \frac{pr}{3J\sigma}$ mm

= *t*, *p*, *c* and σ are as defined in *Pt 5, Ch 10, 1.2 Definition of symbols*

J = ligament efficiency of tube holes around toroid

$= \frac{S - d_e}{S}$

S = pitch of tubes around the toroid, in mm

~~$M = \frac{Wr}{3} - \frac{pd2r}{4}$ Nmm~~ $M = \frac{Wr}{3} - \frac{pd^2r}{4}$ Nmm

Part 7, Chapter 12
Passenger and Crew Accommodation Comfort

■ *Section 5*
Noise and vibration survey reporting

5.1 General

5.1.4 The survey report is to be submitted to LR for evaluation and confirmation that the results are in accordance with the noise and vibration levels specified in these Rules and/or agreed between the Owner and Builder. The assignment of a Class Notation or the issue of a Statement of Compliance will be subject to confirmation by ~~an~~ LR ~~specialist with a competency level of 2 or higher within Passenger and Crew Accommodation comfort (PCAC) (ADV198)~~.

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